Institute of Engineering and Management
of Grenoble Alpes University

HR EXCELLENCE IN RESEARCH

Grenoble INP - UGA is a member of **international** engineering and management education and research **networks.** It is widely recognized in national and international rankings**.**

8 schools + **39** laboratories
8 300 students
1 300 teaching, research, administrative and technical staff

Grenoble INP-UGA is a renowned public institution of higher education and research, and a major player in the Grenoble ecosystem. It is the engineering and management institute of Grenoble Alpes University, and plays a leading role in the scientific and industrial community.

Associate Professor

Research field	Physics of matter with application to semiconductors - Quantum physics
Category / Requested profile	Associate Professor
Ministerial reference for the position	63/28 MCF 0627
CNU Section	63-28
Location	Grenoble
Date of recruitment	01/09/2025 (DD/MM/YYYY)
Position key words	Solid state physics, semiconductor physics, quantum physics, statistical physics

Grenoble INP - UGA is a leading public institution accredited with the French label “Initiative d’excellence”. It offers innovative engineering and management programs, with an increasing internationalization of its course offers. The courses are grounded in sound scientific knowledge and linked to digital, industrial, organizational, environmental and energy transitions. The Engineering and Management Institute of Grenoble Alpes brings together more than 1300 staff members (teacher-researchers, lecturers, administrative and technical staff) and 8300 students, located on 8 sites (Grenoble INP - Ense3, Grenoble INP - Ensimag, Grenoble INP - Esisar, Grenoble INP - Génie industriel GI, Grenoble INP - Pagora, Grenoble INP - Phelma, Polytech Grenoble, Grenoble IAE and the INP Prepa). Grenoble INP is also a highly-ranked institution of higher education and research, leading the way in the fields of engineering and management on an international scale. It is a member of a large number of international academic and research networks. It is part of the European University UNITE!.

As part of Grenoble Alpes University, Grenoble INP has associated guardianship of 39 national and international research laboratories and of technological platforms. The research conducted here benefits both its socio-economic partners and its students. Grenoble INP is at the heart of the following scientific fields: physics, energy, mechanics and materials; digital; micronanoelectronics, embedded systems; industry of the future, production systems, environment; management and business sciences.

Grenoble INP - UGA is an equal opportunity employer committed to sustainability. Grenoble INP-UGA celebrates diversity and equity and is committed to creating an inclusive environment for all employees. All qualified applications will be considered without discrimination of any kind.

Teaching

School : Grenoble INP - Phelma

School website: https//phelma.grenoble-inp.fr/

Contacts: alice.caplier@grenoble-inp.fr

School presentation:

Grenoble INP Phelma is an engineering school of the Grenoble Polytechnic Institute. It offers its students a wide choice of training courses at the cutting edge of scientific and technological progress: micro & nanotechnologies, instrumentation, energy, innovative materials, information technologies, biomedical engineering, process engineering and the environment. The school welcomes over 1400 students in 11 engineering programs, including one apprenticeship program, and a dozen master's programs. The teaching staff is made up of around one hundred tenured professors and over 300 part-time lecturers. The administrative and technical staff numbers around fifty. The school has two sites: the Minatec site in Grenoble and the university campus in Saint-Martin d'Hères. While reaffirming its three main pillars of physics, electronics and materials, Phelma is ensuring that the training of its engineering students and masters students evolves in line with the changing nature of professions, linked primarily to the energy and digital transitions.

Teaching Profile:

Applied physics is one of the three core disciplines at Grenoble INP - Phelma. This position involves teaching physics in its entirety: solid state physics, semiconductor physics, quantum physics, statistical physics.

The person recruited will be expected to contribute to the core physics course taught in the first year, or to the applied physics course taught in one of our fields of study: Iphy (Physical Engineering for Photonics and Microelectronics), Advanced Materials, Nanotech, etc.

The school's ambition is to train engineers to become actors in the ecological transition. As such, the person recruited must be in a position to suggest ways in which the school's physics courses can evolve in line with this transition.

Research

Host laboratory: CROMA or LMGP

The person recruited will be expected to carry out his/her research activities in either the CROMA or LMGP laboratories. In the event of an audition, the candidate will be asked to select one of the two possible laboratories.

Laboratory website:

- CROMA : https://croma.grenoble-inp.fr/
- LMGP : https://lmgp.grenoble-inp.fr/

Contacts :

- CROMA : anne.kaminski@grenoble-inp.fr
- LMGP : carmen.jimenez@grenoble-inp.fr

Croma laboratory research profile:

Background and motivations:

The CMNE “Composants Micro-Nano-Electroniques” (CMNE) team is actively involved in the evolution of micro and nanoelectronic components for the electronics of the future. Research activities focus on transistors and memories, as well as other functions such as sensors, detectors and energy harvesting. To achieve this, the CMNE team draws on recognized expertise in semiconductor devices physics, combining experimental and theoretical approaches. Despite the diversity of applications, the physical problems encountered remain highly coherent, as they are

intimately linked to semiconductor physics (transport, charge control and electrostatic coupling, quantum confinement and coupling effects, traps, recombination and noise, etc.).

Description of the research areas associated with the position:

The successful candidate will be working in the field of semiconductor devices physics, with a solid grounding in statistical physics, quantum physics and semiconductor physics. He/she will be able to analyse transport phenomena and light-matter interactions for applications in memory, transistors and optoelectronics (photodetectors, LEDs, photodiodes....).

LMGP laboratory research profile:

Background and motivations:

The LMGP chemically synthesizes and characterizes materials, frequently nanostructured semiconductors or thin films, for various applications in microelectronics and energy conversion. The laboratory is interested in the relationship between material synthesis and structure, and between structure/shaping and functional properties. The physical properties (optical, electronic, thermal) of these materials are strongly linked to the chemistry, band structure, crystal structure, defects and stress of thin films. To this end, LMGP uses electron microscopy techniques (SEM, TEM) as well as spectroscopic techniques using light (RX- UV-visible-Infrared) such as absorption spectroscopy, Raman, FTIR, photoluminescence and fluorescence.

Description of the research areas associated with the position:

The person recruited will be an expert in materials physics, with a solid grounding in solid state physics and semiconductor physics. He/she will have expertise in the analysis of structural properties applied to nanomaterials and/or thin films, in order to relate them to functional properties and synthesis methods, using theoretical models or simulation. She will work in collaboration with the two LMGP's materials synthesis teams.

Specific requirements or conditions

Administrative Activities Related to this position of Associate Professor :

Candidates recruited as Associate professors are likely to take on collective responsibilities such as being in charge of a teaching unit, a teaching programme or an entire year of study.

In the context of research, excellence and increasing internationalization, the quality of candidates' research activities must be attested by recent scientific production (publications, communications, etc.) in the best journals or international conferences in their fields.

In addition to scientific excellence and consistency between both the applicant's and the host laboratory's research strategy, candidates should describe how their integration project meets responsible research objectives that are compatible with the socio-environmental issues applicable to their field of research, and how the principles of open science are taken in account.

Administrative activities

Within two to three years of taking up the post, the successful candidate will also be responsible for a TP platform at the school.

Special features of the position

Teaching can take place at either of the school's two sites: Grenoble (Polygone scientifique) and Saint Martin-d'Hères (Campus est).

How to apply

Applicants must submit their applications on the Odyssée Platform of the French Ministry of Higher Education and Research from Tuesday March 4th 2025, 10am (Paris time) and Friday April 4th 2025, 4pm (Paris time), deadline.

Any document sent outside the Odyssée procedure will not be considered.

The interview will include simulation/situational exercises.

The details will be communicated when the invitation is sent out. In addition, part of the interview may be carried out in English.